



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/637,889	08/08/2003	David C. Challener	RPS920010143US1	2488

25299 7590 07/09/2009
IBM CORPORATION
PO BOX 12195
DEPT YXSA, BLDG 002
RESEARCH TRIANGLE PARK, NC 27709

EXAMINER

COPPOLA, JACOB C

ART UNIT	PAPER NUMBER
----------	--------------

3621

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

07/09/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

RPSIPLAW@US.IBM.COM

Office Action Summary	Application No. 10/637,889	Applicant(s) CHALLENGER ET AL.	
	Examiner JACOB C. COPPOLA	Art Unit 3621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-11, 14, 15, 39, 40, 51 and 52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-11, 14, 15, 39, 40, 51 and 52 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Acknowledgements

1. This action is in reply to the 'Amendment to the Claims' and 'Remarks' filed on 06 April 2009 ("09 Apr Amendments" and "09 Apr Remarks," respectively).
2. Claims 8-11, 14, 15, 39, 40, 51, and 52 are currently pending and have been examined.
3. This Office Action is given Paper No. 2009. This Paper No. is for reference purposes only.

Claim Rejections - 35 USC § 112, 2nd Paragraph

4. The following is a quotation of the second paragraph of 35 U.S.C. §112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 8-11, 14, 15, 39, 40, 51, and 52 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention.

Regarding Claim 8

6. This claim recites "a database *accessed* by said central computer system" (emphasis added). This claim is indefinite because it is unclear whether the central computer system comprises structure that accesses the database in the future, or whether the central computer system only comprises structure that has accessed the database in the past.

Art Unit: 3621

7. Additionally, this claim recites “a plurality of meters, and a communication network connecting each meter within said plurality of meters with said central computer system to transmit data to said central computer system.” From this recitation, it is unclear whether the plurality of meters is to “transmit data” or whether some other structure is to “transmit data.”

8. Additionally, this claim recites “information encrypted with said private cryptographic key is decrypted with said public cryptographic key.” This claim is indefinite because one of ordinary skill in the art would not understand the structural component present in this recitation. Additionally, it is unclear what information this recitation is referring to.

Regarding Claims 8 and 14

9. These claims recite “each data record in said plurality of data records includes a meter identifier identifying a meter within said plurality of meters associated with said data record and a public cryptographic key of said meter.” These claims are indefinite because, from this recitation, it is unclear whether each data record includes a “public cryptographic key” or whether the meter (with corresponding meter identifier) is merely associated with a “public cryptographic key.”

10. Additionally, this claim recites “to determine whether *said alphanumeric value received as said message* follows, within said ordered sequence of values, a value previously transmitted as said alphanumeric value from said meter” (emphasis added). This claim is indefinite because the message previously received contains more than the alphanumeric value, however this recitation indicates that the message is only the alphanumeric value.

Art Unit: 3621

Regarding Claim 39 and 51

11. These claims recite “determining in said central computer system whether said alphanumeric value additionally transmitted in an unencrypted form in step d) follows an alphanumeric value additionally transmitted by said meter in said predetermined sequence of alphanumeric values.” These claims are indefinite because it is unclear what is being determined in this step.

12. The Examiner finds that because the claims are indefinite under 35 U.S.C. §112, 2nd paragraph, it is impossible to properly construe claim scope at this time. However, in accordance with MPEP §2173.06 and the USPTO’s policy of trying to advance prosecution by providing art rejections even though these claims are indefinite, the claims are construed and the prior art is applied as much as practically possible.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. §103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 8-11, 14, 15, 39, 40, 51, and 52, as understood by the Examiner, are rejected under 35 U.S.C. §103(a) as being unpatentable over Villicana et al. (U.S. 6,819,098 B2) (“Villicana”), in view of Wheeler et al. (U.S. 2002/0026575 A1) (“Wheeler”).

Regarding Claim 8

15. Villicana discloses a central computer system (system **100**); a database accessed by said central computer system (data center **103**); a plurality of meters (utility meters **113**); a communication network (Internet **111**) connecting each meter within said plurality of meters with said central computer system to transmit data to said central computer system (“a connection via the Internet **111** to system **100** to upload power usage data from meter **113** to system **100** for storage in data center **103**”); said database stores a plurality of data records (“a data center **103** that includes relational databases in which utility meter acquired data and account information is stored”), each data record in said plurality of data records includes a meter identifier identifying a meter within said plurality of meters associated with said data record (“transmit the identification number to database **103** so that the correlation between the identification number and the silicon serial number may be recorded”); each of said meters includes data storage (“non-volatile memory” or NVM **205**) and a microprocessor (controller **201**) programmed to access said data storage and transmit a message, wherein said message includes a data value representing a measured usage of said utility product, over said communication network to said central computer system; said central computer system includes a processor programmed to receive said message; said microprocessor in each meter in said plurality of meters is additionally programmed to transmit, on a periodic basis, to said central computer system, in an unencrypted form, said value representing said measured usage of said utility product; and store data derived from said value representing a measured usage of said

Art Unit: 3621

utility product within said data record including said meter identifier identifying said meter (fig. 1 with associated text; c. 2, l. 39-41; c. 1, l. 50-60; c. 5, l. 61 – c. 6, l. 13; c. 4, l. 28-54).

16. Villicana does not directly disclose each data record includes a public cryptographic key of said meter; each of said meters includes data storage storing a private cryptographic key of said meter; a microprocessor programmed to encrypt a message with said private cryptographic key; wherein said message includes an alphanumeric value; information encrypted with said private cryptographic key is decrypted with said public cryptographic key; said central computer system processor is programmed to decrypt the received encrypted message with said public cryptographic key of said meter, said message encrypted with said private cryptographic key, forming a decrypted message, and to compare a version of said alphanumeric value from said decrypted message with an unencrypted version of said alphanumeric value; said microprocessor in each meter in said plurality of meters is additionally programmed to generate an ordered sequence of values for use as each said alphanumeric value; and transmit, on a periodic basis, to said central computer system, a next value from said ordered sequence of values, in both an unencrypted form, and as combined with said value representing said measured usage of said utility product and encrypted with said private cryptographic key; and said processor within said central computer system is additionally programmed to receive said unencrypted form of said value in said ordered sequence of values as the unencrypted version of said alphanumeric value; determine whether said alphanumeric value received as said message follows, within said ordered sequence of values, a value previously transmitted as said alphanumeric value from said meter; and store data derived from said value representing a measured usage of said utility product within said data record including said meter identifier identifying said meter in response

Art Unit: 3621

to determining that said decrypted message matches said unencrypted version of said message together with determining that said alphanumeric value follows said value previously transmitted as said alphanumeric value from said meter.

17. Wheeler, however, teaches a data record including a public cryptographic key of a device (fig. 4b with associated text); a plurality of devices, each of said devices includes data storage storing a private cryptographic key of said device (§ 0109); a microprocessor programmed to encrypt a message with said private cryptographic key (§§ 0004, 0114, 0144, 0145, 0148, and 0172); wherein said message includes an alphanumeric value (“time/date stamp”) (§§ 0115 and 0172); information encrypted with said private cryptographic key is decrypted with said public cryptographic key (§ 0116); a central computer system processor is programmed to decrypt the received encrypted message with said public cryptographic key of said device (§ 0116), said message encrypted with said private cryptographic key (§ 0114), forming a decrypted message (§ 0116), and to compare a version of said alphanumeric value from said decrypted message with an unencrypted version of said alphanumeric value (§§ 0004, 0115, 0116, and 0172); said microprocessor in each device in said plurality of devices is additionally programmed to generate an ordered sequence of values for use as each said alphanumeric value (§§ 0115 and 0172), and transmit to said central computer system, a next value from said ordered sequence of values, in both an unencrypted form, and as combined with said message and encrypted with said private cryptographic key (§ 0004, 0145, and 0172); and said processor within said central computer system is additionally programmed to receive said unencrypted form of said value in said ordered sequence of values as the unencrypted version of said alphanumeric value (§§ 0114-0116 and 0172), and determine whether said alphanumeric value received as said message follows,

Art Unit: 3621

within said ordered sequence of values, a value previously transmitted as said alphanumeric value from said device (§ 0115); and determining that said decrypted message matches said unencrypted version of said message together with determining that said alphanumeric value follows said version of said alphanumeric value previously transmitted as said alphanumeric value from said device (§ 0115).

18. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to include in the usage reporting method of Villicana the message authentication method as taught by Wheeler since the claimed invention is merely a combination of old elements, and in the combination each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

Regarding Claim 9

19. The combination of Villicana and Wheeler discloses the limitations of claim 8, as described above. The combination of Villicana and Wheeler, further, discloses wherein said central computer system is additionally programmed to read said version of said alphanumeric value previously transmitted from said meter from said data record including said meter identifier identifying said meter, and to write said alphanumeric value received as said message to said data record including said meter identifier (Villicana, c. 1, l. 50-60; and c. 5, l. 61 – c. 6, l. 13; and Wheeler, ¶0115).

Art Unit: 3621

Regarding Claim 10

20. The combination of Villicana and Wheeler discloses the limitations of claim 8, as described above, and further discloses wherein said central computer system is additionally programmed to receive a transmission over said communication network from an additional meter, to recognize a set up request code transmitted from said additional meter, to receive a meter identifier and a public cryptographic key from said additional meter, and to record said meter identifier and said public cryptographic key received from said additional meter in an additional data record within said database (Villicana, c. 6, l. 20+; and Wheeler, ¶ 0118).

Regarding Claim 11

21. The combination of Villicana and Wheeler discloses the limitations of claim 8, as described above. The combination of Villicana and Wheeler, further, discloses a server computer (server **101**) having an interface for communicating over a computer network with at least one client computer (computer **117**) and an interface for accessing said database, wherein said server computer is programmed to receive data from said client computer including a meter identifier stored in a data record within said database, and said server computer writes data received from said client computer to said data record within said database (Villicana, c. 3, l. 60+; c. 7, l. 21 – c. 8, l. 26; and fig. 7 with associated text).

Art Unit: 3621

Regarding Claims 14 and 15

22. These claims encompass substantially the same scope as claims 8 and 9. Accordingly, claims 14 and 15 are rejected in substantially the same manner as claims 8 and 9, as described above.

Regarding Claims 39, 40, 51, and 52

23. These claims are directed to a method and a computer-readable medium of the above system claims and are not patentably distinct. Accordingly, claims 39, 40, 51, and 52 are rejected in substantially the same manner as their corresponding system claims, as described above.

Claim Interpretation

24. After careful review of the original specification, the Examiner is unable to locate any lexicographic definitions with the required clarity, deliberateness, and precision.

25. The Examiner finds that because the examined claims recite neither “step for” nor “means for,” the examined claims fail Prong (A) as set forth in MPEP §2181 I. Because the examined claims fail Prong (A) as set forth in MPEP §2181 I., the Examiner concludes that all examined claims do not invoke 35 U.S.C. §112, 6th paragraph. See also *Ex parte Miyazaki*, 89 USPQ2d 1207, 1215-16 (B.P.A.I. 2008)(precedential).

Response to Arguments

26. Applicants argue:

Villicana and Wheeler fail to teach or anticipate the requirements of claim 8 for said microprocessor in each meter in said plurality of meters to be additionally programmed to generate an ordered sequence of values for use as each said alphanumeric value, and to transmit, on a periodic basis, to said central computer system, a next value from said ordered sequence of values, in both an unencrypted form, and as combined with said value representing said measured usage of said utility product and encrypted with said private cryptographic key.

pp. 10-11, 09 Apr Remarks.

27. The Examiner respectfully disagrees.

28. More specifically, Applicants argue “while a date or time stamp may form an ordered sequence of values, there is no indication in Wheeler that the meter should transmit the next from such a sequence.” See p. 11, 09 Apr Remarks. The Examiner respectfully disagrees. All values of time stamps, which by nature are sequential, represent a “next value” from the sequential values of time.

29. Again more specifically, Applicants argue “Wheeler only suggests the encryption of the date and time stamp as a part of the message. There is no indication in Wheeler that the date and time stamp should be sent in both an encrypted and an unencrypted form, as required by the Applicants’ claim 8.” See p. 11, 09 Apr Remarks. The Examiner respectfully disagrees. As shown in the Examiner’s citations (which relate to figure 76), the time stamp is sent in the “message content **7603**,” which is unencrypted. Furthermore, the “DS **7605**” (*i.e.*, the digital signature of the message content) contains an encrypted version of the “message content **7603**.” Therefore, the time stamp is sent in both an unencrypted and encrypted version.

Art Unit: 3621

30. Additionally, Applicants also argue:

Villicana and Wheeler fail to teach or anticipate the requirements of claims 8, 14, 39, and 51 for said processor within said central computer system is additionally programmed to receive said unencrypted form of said value in said ordered sequence of values as unencrypted version of said alphanumeric value, to determine whether said alphanumeric value received as said message follows, within said ordered sequence of values, a value previously transmitted as said alphanumeric value from said meter, and to store data derived from said value representing a measured usage of said utility product within said data record including said meter identifier identifying said meter in response to determining that said decrypted message matches said unencrypted version of said message together with determining that said alphanumeric value follows said value previously transmitted as said alphanumeric value from said meter.

pp. 11-12, 09 Apr Remarks

31. The Examiner respectfully disagrees.

32. More specifically, Applicants argue “there is no mention in Wheeler that the random number should be sent in an unencrypted form as well as an encrypted form, as required by the Applicants' claims 8, 14, and 39.” See p. 12, 09 Apr Remarks. The Examiner respectfully disagrees. See explanation above.

33. Again more specifically, Applicants argue “There is also no mention in Wheeler that a value of the random number is compared to a value previously transmitted as the alphanumeric value, so that a determination can be made of whether the value of the random number follows the previously transmitted value in the numeric sequence, as required by the claims 8, 14, and 39.” See p. 12, 09 Apr Remarks. Here, Applicants are arguing limitations that are not in the claims. In response to Applicants' argument that the references fail to show certain features of Applicants' invention, it is noted that the features upon which Applicants rely (*i.e.*, “so that a determination can be made of whether the value of the random number follows the previously transmitted value in the numeric sequence”) are not recited in the rejected claims. Although the

Art Unit: 3621

claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Additionally, the Examiner respectfully disagrees. Wheeler, in at least ¶ 0115, indicates that the time stamp allows the receiving party to determine whether the time stamp follows from a previously transmitted time stamp.

Conclusion

34. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure (see attached form PTO-892).

35. Any inquiry of a general nature or relating to the status of this application or concerning this communication or earlier communications from the Examiner should be directed to Jacob C. Coppola whose telephone number is (571) 270-3922. The Examiner can normally be reached on Monday-Friday, 9:00 a.m. - 5:00 p.m. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Andrew Fischer can be reached at (571) 272-6779.

36. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

Art Unit: 3621

system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private

PAIR system, please contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).

/JACOB C. COPPOLA/

Patent Examiner, Art Unit 3621

July 2, 2009

/ANDREW J. FISCHER/

Supervisory Patent Examiner, Art Unit 3621